

NOTES ON THE OCCURRENCE OF A SPECIES OF
PLECOTREMA AND OF OTHER SPECIES OF
 MOLLUSCA IN PORT JACKSON.

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An interesting addition to the known fauna of Port Jackson lately occurred to me, in *Plecotrema octanfracta*, Jonas. This species appears to possess some unusual facilities for wandering, which it shares with other *Auriculidæ*, and with *Truncatella*, for it has been observed in the Sandwich, Paumotu, Gambier, Tonga, Samoa, Fiji, and New Caledonia Islands, though not hitherto recorded from Australia, nor from any extra-tropical station. It is not noticed from Port Jackson in the lists of Angas or of Whitelegge, but Pfeiffer has described as from Port Jackson a *Plecotrema bicolor* (Mon. Auric. p. 103 : B. M. Cat. Auriculidæ, p. 78) doubtless the species under discussion. A species, probably allied to this, *P. ciliata*, Tate, is quoted in Adcock's "Hand-List of the Aquatic Mollusca inhabiting South Australia."

The earliest description appears to be that by Jonas in the Zeit. Malak. 1845, p. 160. Garrett redescribed the species in P.Z.S. 1887, pp. 295-6, and figured it under the name of *P. conso-brina* (Proc. Phil. Acad. Nat. Sci. 1873, pl. III, fig. 69). The members of this genus do not seem to have been discriminated in a satisfactory manner. Messrs. H. and A. Adams published in 1853 (P.Z.S. pp. 120-3) the definition and a monograph of the genus, based chiefly upon the material contained in the Cuming Collection. To one not possessing access to the types in the British Museum this paper is of slight value. No figures are attached, many species are unlocalised, the descriptions are brief and without measurements, and finally, Jonas's *Pedipes octanfracta* is entirely omitted.

In determining the Port Jackson shell as *P. octanfracta*, I am guided chiefly by Garrett's description and figure, as well as by a careful comparison with examples from various Polynesian islands. That others may form an independent opinion on the matter, I add a figure, drawn for me by Mr. Hedley, and give a full description of the shell now recorded.

Possibly to the synonymy quoted by Garrett, viz., *clausa*, H. and A. Adams, and *consobrina*, Garrett, it will be found necessary to add *lirata* and *concinna*, both of H. and A. Adams.

Description.—Shell ovate, the periphery coincident with the posterior end of the varix, rounded anteriorly, acuminate posteriorly; colour pale purplish-brown, with a darker stripe beneath the suture and a lighter band beneath that again. Whorls $7\frac{1}{2}$, the upper ones together composing one-third of the shell's total length, nearly flat-sided, the last sloping to the periphery, thence rounded to the base. Sculpture: the body whorl encircled by nineteen strong projecting revolving ridges, which cross the varix and abruptly terminate at the aperture, the ridges being half the breadth of the interstices; the penultimate and the antepenultimate whorls have each five revolving ridges; the earlier whorls are worn smooth. Suture channelled. Umbilicus funnel-shaped, about as deep as wide, and about a sixth of the shell's diameter across, surrounded by a double ridge which terminates with the varix, abruptly descending, and lirata within. Aperture one-half the length of the shell, narrow, somewhat ear-shaped, furnished without by a stout varix half the breadth of the aperture projecting more on the anterior end, on the right an inner lip stands as a rim within the varix, and spreads on the left upon the body whorl as a callus which above and below near each junction with the varix is emarginate, the lower emargination being opposite the columellar tubercle; five tubercles protect the entrance; on the outer lip are two blunt bosses whose apices are midway between the denticles of the left side; these latter consist of a rounded tubercle on the parietal wall half-way between the



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bifid tooth and the anterior angle of the aperture, of a compressed deeply entering keel, bifid externally, situated half-way down the aperture, and lastly, of a compressed deeply entering keel upon the columella, whose course can be traced from without by a wide furrow descending to the extremity of the umbilicus. Length $5\frac{1}{2}$, breadth $3\frac{1}{2}$ mm.

SCUTELLINA CINNAMOMEA, Gould.

This species was described by Gould in the Proc. Bost. Soc. Nat. Hist. Vol. ii. p. 151, in 1846, as a *Patella* (Exped. Shells, p. 9); it was again described by the same author in the U.S. Exploring Expedition, p. 345, and figured in the same work, fig. 449a, b.

Although the species has long been known to those who take an interest in Conchology in New South Wales and South Australia, it has always been considered a rare shell; but this year I have found it in considerable numbers rather below low-water mark, adhering to stones lifted from pools of undisturbed water all along the north side of the harbour, from Bradley's Head to Ball's Head, in the month of September.

In 1867 Mr. G. F. Angas published in the Proc. Zool. Soc. p. 185, a very valuable List of the Marine Mollusca found in Port Jackson and the adjacent Coasts; in fact, the issue of this paper was the starting point of Conchological study in New South Wales: for the time a masterly production. He listed in it three species of *Emarginula*: *rugosa* of Q. et G., *stellata* of A. Adams, and *dilecta* of A. Adams. No. 210 on Angas's list, *E. (Clypidina) stellata*, was the species which workers in conchology here were led to believe, till 1871, was the species under consideration and many specimens were distributed as such. But in 1871 Angas published a List of Additional Species of Marine Mollusca found in Port Jackson and the adjacent Coasts, in which *Scutellina cinnamomea* was included (p. 97), and it gave A. Adams' *Scutellina ferruginea* as a synonym.

This species is also recorded in Whitelegge's List of the Marine and Fresh-Water Invertebrate Fauna of Port Jackson and Neigh-

bourhood, read before the Roy. Soc. of N. S. Wales, 3rd June, 1889, and published in their Journal and Proceedings as *Acmæa cinnamomea*, p. 272.

The specimens in the Australian Museum are still named incorrectly *Emarginula stellata*; to prevent future mistakes I think it worth while giving the correct name of the species in our Journal. The fact is that the species referred to as *stellata* is neither an *Emarginula* nor a *Scutellina*; it is a *Subemarginula*, and was described by A. Adams in 1851 in Proc. Zool. Soc. p. 87, as *Clippidina stellata*; the latter is figured in Sowerby's Thesaurus, p. 219, fig. 103.

Scutellina cinnamomea will be found fully described and well figured in Tryon and Pilsbry's Manual of Conchology, Vol. xii. p. 128, pl. XLVI. figs. 8, 9, 10, 11.

CHITON PICEUS, Reeve.

This species is recorded in Angas's List of the Marine Mollusca found in Port Jackson and on the adjacent Coasts, in P.Z.S. for 1867, p. 223, No. 241, as *Ch. piceus* of Gmel., with a reference to its description in Syst. Naturæ, p. 3204.

It is a very common species, as Angas remarks, "freely distributed on most parts of the coast, dwelling in cavities on exposed parts of the rocks," generally found about high-water mark,—at least this form is; I think, from a minute examination of the spines on the mantle and of the disarticulated valves, that this is *Acanthopleura spiniger* of Sowerby. Sowerby described this species in 1840 in Mag. Nat. Hist. p. 278, Suppl. pl. xvi. fig. 2. He figured it also in Conch. Illust. fig. 69, as *Ch. spiniger*.

A *Chiton* was described by Linnæus as *Chiton aculeatus* in Syst. Nat. x. p. 667, founded on Rumphius' Amboinische Rariteitkammer, pl. x. fig. 4, which was supposed to be this species, but the original description was so vague that Hanley suggested that the species should be dropped.

Chiton piceus of Reeve was not described till 1847 (in Conch. Icon. Monograph of *Chitons*, pl. XIII. fig. 70).

The species *piceus* is omitted in Whitelegge's List of the Invertebrate Fauna of Port Jackson, published in the Journal and Proceedings of the Royal Society of N. S. Wales for 1889, and *Chiton incana* of Gould represents the species there, No. 652, p. 273; but as the latter is a synonym of *Liolopleura Gaimardi* of Blainville, the name *incana* will not stand.

Under any circumstances the name *piceus* must be given up for our *Liolopleura*, and it must be given up also for our *Acanthopleura*, for a species of each of these genera exists in Port Jackson and on our adjacent coasts; one is *Liolopleura Gaimardi*, Blainville, the other is *Acanthopleura spiniger*, Sowb.

The former occupies exposed surfaces of rocks about high-water mark, and prefers fretted-out holes in the rock; the other I have only obtained by wading at very low tides, and then it is generally under rocks or in secluded places. The two species are extremely alike, but *A. spiniger* is the larger of the two; the two species can be readily distinguished by the characters of the girdle spines, *spiniger* having calcareous black or buff smooth spines, rather regularly curved, in alternate light and dark patches, about $2\frac{1}{2}$ mm. long, the interior of the valves of a purple-brown colour; *Gaimardi* has the girdle densely clothed with intermingled minute, larger, and large calcareous spines, white and dark in alternate patches, some of them being striated.

For general details, see Tryon and Pilsbry's Man. of Conch. Vol. xiv. pp. 221 and 240.

CHITON GLAUCUS, Gray.

This name is given in Angas's List of the Species of Marine Mollusca found in Port Jackson and the adjacent Coasts, published in P.Z.S. for 1867, p. 185, No. 229. He gives as synonyms for the species, *Ch. Quoyi*, Desh., and *Ch. viridis*, Q. et G. He remarks that it is rare in Port Jackson, very variable in colour, and that the *green var.* is *Ch. Quoyi*.

The only other list of any importance of Port Jackson shells published is by Whitelegge, in the Journ. and Proc. of the Royal Soc. of N. S. Wales for 1889, where the same supposed species is

recorded on p. 273 No. 633, as *Chiton glaucus*, and he makes it synonymous with *Ch. Quoyi*, Desh., and refers to Reeve's fig. 68 in his Mon. of *Chitons* in Vol. iv. pl. XIII.

It is also referred to in Hutton's Man. of the Moll. of New Zealand, p. 112, 1880, as occurring in New Zealand, which is its true home.

I wish to point out that the name *glaucus* will not hold good for this species; and in the second place, that I have very great doubts if this species has really ever been taken in Port Jackson.

Gray's *Ch. glaucus* was described in 1828 in *Spicilegia Zoologica*, part 1, p. 5; it was not figured and the habitat of his species was unknown. He states that it was *white inside, glaucous-green outside*.

Pilsbry remarks (Man. of Conch. by Tryon and Pilsbry, Vol. xiv. pp. 172, 173):—"Gray's *glaucus* had lost its girdle. No one has seen Gray's type, and its generic characters are wholly unknown. I have never seen a glaucous-green specimen of this species white inside; they are always blue. The identification of Quoy and Gaimard's well described and figured species with Gray's is highly hypothetical."

Gray's name *glaucus*, therefore, will have to be dropped.

The next name, *Ch. viridis*, which was given to the species by Deshayes, will also have to succumb, as the name was given by Spengler earlier to another species.

Quoy and Gaimard repeated the name of *viridis* in *Voyage de l'Astrolabe*, Zool. iii. p. 383, pl. LXXIV. figs. 23-28, in 1834.

The same *Chiton* was described by Deshayes in 1836 in Lamarck's *Anim. sans Vertèbres*, vi. p. 509, as *Quoyi*, and this name has been adopted by Pilsbry, the most recent monographer on the *Chitons*, in his *Monograph on the Polyplacophora*, Vol. xiv. p. 172, Man. of Conch. by Tryon and Pilsbry, 1892.

I have never myself taken a specimen of this species in Port Jackson, nor have I ever been able to obtain one taken from there, nor have I seen one. I find no such species taken from Port Jackson either in the Macleay Museum or the Australian Museum Collections. I do not say that it has not been found,

but I cannot find a specimen which has come from there; further, Carpenter makes no allusion to this species existing in Angas's collection, which he examined critically, as from New South Wales.

Is it possible that the name *Plaxiphora glauca* of Q. et G., also described by Q. et G. in 1834 in the Voyage de l'Astrolabe, Zool. iii. p. 376, pl. LXXIV. figs. 7-11, has got mixed up with the smooth glaucous species from New Zealand? The true *P. glauca* was originally procured at D'Entrecasteaux Channel, Tasmania, a species, says Pilsbry, "evidently allied to *Plaxiphora petholata*; it is probably the form Angas collected at Guichen Bay in South Australia, and was listed by him *P. ciliata*."

Angas remarks that it is the largest of the South Australian *Chitonidae*.

CHITON PELLIS-SERPENTIS, Quoy et Gaimard.

This species, originally described in the Voyage de l'Astrolabe, Zool. iii. Moll. p. 381, pl. LXXIV. figs. 17-22, 1834, has hitherto not been recorded as being found in Port Jackson or the neighbouring parts of the N. S. Wales coasts. I have found it recently in considerable numbers in Port Jackson and at Port Hacking.

Its home seems to be New Zealand, where it is said to be one of the most abundant of the *Chitons* found on those shores. It is not in Angas's List of the Marine Mollusca found in Port Jackson, published in 1867 in Proc. Zool. Soc. p. 185, nor is it recorded in Whitelegge's List of the Marine and Fresh-Water Invertebrata of Port Jackson and Neighbourhood, published in the Journal and Proceedings of the Royal Society of N. S. Wales for 1889.

It is well figured by Reeve in the Conch. Icon. Monograph of *Chitons*, pl. xv. fig. 84, and in Tryon and Pilsbry's Manual of Conchology, Vol. xiv. p. 173, pl. xxxvii. figs. 14-18. It is closely allied to *C. Sinclairi*, Gray, another New Zealand species.

CHITON INCEI, Reeve.

Described in Conch. Icon. Monograph *Chitons*, Sp. 94, pl. xvi. fig. 96, detail, fig. 94, 1847, and listed in Angas's Marine Moll.

of Port Jackson and adjacent Coasts in P.Z.S. 1867, p. 185, No. 239, on p. 223, and also in Whitelege's List of Marine and Fresh-Water Invertebrate Fauna of Port Jackson and Neighbourhood, published in 1889 in Journ. and Proc. Royal Soc. N. S. Wales; it will have in future to be known as *Onithochiton Lyellii*, Sowerby, having been described by him in 1832 in P.Z.S. p. 26, and figured by him in Conch. Illust., fig. 7.

It was described by Reeve a second time in Conch. Icon. as *Ch. puncticulatus*, Sp. 69, pl. XII. fig. 69b. See Tryon and Pilsbry's Manual of Conchology, Vol. xiv. p. 247, pl. LV. figs. 1-7.

ISCHNOCHITON HADDONI, Pilsbry.

One of our commonest *Chitons*, it has hitherto been regarded and catalogued as *Ischnochiton longicymba* of Q. et G. It will be recognised as the *Chiton* in this harbour having a rather more or less wide white dorsal stripe; other specimens of it are of a light buff all over; others are brown, or speckled with olive-black, and some show a decided red tinge.

We are indebted to Mr. H. A. Pilsbry for showing that we have been labouring under a misapprehension as to this species which he has defined with much care and minuteness in the Manual of Conchology by Tryon and Pilsbry, Vol. xiv. p. 88, pl. XXII. figs. 67-73.

The true *I. longicymba* is a New Zealand species and is claimed to be found in South Australia, Tasmania, and Victoria, but so far, I think, no published account has been made of the results of a critical examination of the supposed species otherwise than from New Zealand.

The "scales of the girdle of *Haddoni* are beautifully regular in size and arrangement and are evenly and deeply grooved; whereas in *longicymba* the girdle is closely covered with solid convex but somewhat flattened imbricating scales, most of which are rather weakly striated, but among which non-striated scales are mingled" (Pilsbry).